

Claims

What is claimed is:

- 5 1. A method comprising:
 - counting a number of non-consecutive groups of consecutive samples meeting a predetermined threshold requirement;
 - determining if a count of the number of non-consecutive groups of consecutive samples meeting a predetermined threshold requirement
- 10 meets a settle criteria; and
 - transitioning from a seek control operation to a track following control operation in response to determining that the count of the number of non-consecutive groups of consecutive samples meeting the predetermined threshold requirement meets the settle criteria.
- 15 2. The method of claim 1, wherein counting a number of non-consecutive groups of consecutive samples meeting a predetermined threshold requirement includes:
 - incrementing a consecutive counter if a sample is within the predetermined threshold requirement; and
 - incrementing a non-consecutive counter based on a current count of the consecutive counter.
- 25 3. The method of claim 2, wherein the consecutive counter has an associated first settle criteria of n number of consecutive samples, and wherein the non-consecutive counter has an associated second settle criteria of m number of non-consecutive groups of consecutive samples.
4. The method of claim 3, wherein the non-consecutive counter is incremented in response to a current count of the consecutive counter
- 30 being equal to n.

5. The method of claim 4, wherein the consecutive counter is reset such that a current count of the consecutive counter is zero in response to incrementing the non-consecutive counter.

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6. The method of claim 3, wherein the seek control operation is transitioned to a track following control operation in response to a current count of the non-consecutive counter being equal to m.

10 7. A method of transitioning from a seek control operation to a track following operation in a disc drive system, comprising:

sampling a metric of a read/write head of the disc drive system;

comparing the metric to a threshold;

determining if the metric is within the threshold or exceeds the

15 threshold;

incrementing a consecutive counter if the metric is within the threshold;

determining if a current count of the consecutive counter is a first predetermined value;

20 incrementing a non-consecutive counter if the consecutive counter is the first predetermined value;

determining if a current count of the non-consecutive counter is a second predetermined value; and

initiating the track following operation if the current count of the 25 non-consecutive counter is the second predetermined value.

8. The method of claim 7, wherein the first predetermined value is n number of consecutive samples, and wherein the second predetermined value is m number of non-consecutive groups of consecutive samples.

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9. The method of claim 8, wherein the track following operation is initiated in response to a count of the non-consecutive counter indicates that m number of non-consecutive groups of n consecutive samples have been encountered.

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10. The method of claim 7, wherein the consecutive counter is reset such that a current count of the consecutive counter is zero in response to incrementing the non-consecutive counter.

10 11. The method of claim 7, wherein the metric is a position error of the read/write head.

12. The method of claim 7, wherein the metric is a velocity error of the read/write head.

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13. The method of claim 7, wherein the metric includes both a position error and a velocity error of the read/write head.

14. A controller, comprising:

20 a comparator;
a consecutive counter coupled to the comparator; and
a non-consecutive counter coupled to the consecutive counter;
wherein the comparator receives sampled data, compares the sampled data to a threshold, and outputs a result of the comparison, wherein the consecutive counter either increments or resets based on the results of the comparison, wherein the non-consecutive counter increments when a count of the consecutive counter reaches a first predetermined value, and wherein the non-consecutive counter initiates a transition of control to a track following control when a count of the non-consecutive counter reaches a second predetermined value.

15. The apparatus of claim 14, wherein the first predetermined value is n number of consecutive samples, and wherein the second predetermined value is m number of non-consecutive groups of consecutive samples.

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16. The apparatus of claim 15, wherein the non-consecutive counter is incremented in response to a current count of the consecutive counter being equal to n.

10 17. The apparatus of claim 16, wherein the consecutive counter is reset such that a current count of the consecutive counter is zero in response to incrementing the non-consecutive counter.

15 18. The apparatus of claim 14, wherein the non-consecutive counter initiates the transition of control to the track following control operation in response to a current count of the non-consecutive counter indicating that m number of non-consecutive groups of n consecutive samples have been encountered.

20 19. The apparatus of claim 14, wherein the sampled data includes position error data of a read/write head of a disc drive.

20. The apparatus of claim 14, wherein the sampled data includes velocity error data of a read/write head of a disc drive.

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